



A Cognizant and Mulesoft Point of View in partnership with Nimbus Ninety

Data Maturity in Manufacturing

Optimising data strategy and unlocking hidden value

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Everyone
says, data is
the oil of the
21st century.
But, what is
the price per
barrel?

Anonymous





Introduction

Manufacturers are experiencing a data explosion, as a confluence of technologies drives the digitisation and automation of the sector. In the last year the coronavirus pandemic has fueled expectations that data will be available in real time, from any location.

Data has the power to offer a new perspective on operations and strategy. Large engineering, procurement and R&D divisions with established analytical skills give manufacturers a head start with data. While pockets of excellence exist in all organisations, many struggle to deeply align data to drive strategic value at the corporate or group level.

The universal challenge is how to separate the value from the ‘noise’, to better understand customers and processes. Many see opportunities to harness data to drive internal efficiencies and grow ‘-as-a-service’ propositions. If new data-led business models and their potential benefits are to be fully realised organisations need to deploy the right data model that solves common quality and interoperability challenges, but they will only succeed if they also have deep-level buy-in from across the business.

At the same time, translating data investments into ROI in a time-pressured and cost-sensitive industry is a core challenge. To thrive post-pandemic, a new approach to data and data sharing can help manufacturers drive efficiencies both internally and across supply chains. Data is key to adapting to new reporting standards, meeting changing customer requirements, or embedding remote monitoring and safety. Driving up quality and forming enterprise-wide data standards will help scale currently underexploited AI technologies.

The factories of the future are data powered, and the organisations that can best exploit that opportunity will be tomorrow’s winners. In the report that follows we explore how manufacturers are realising ambitious visions to embed data at the core of their business, and advance data maturity.

Acknowledgements

For the purpose of this study, manufacturing included aerospace, automotive, construction and engineering. The authors thank the senior data, operations and IT leaders from these industries, who gave their time to be interviewed for this white paper in early 2021. Their views, some of which are quoted in the following pages, have guided the direction of this report. We are grateful for their invaluable contributions and insights.

Barriers to Unlocking the Value of Data

What's holding manufacturers back from achieving value at scale?

Manufacturing is a broad and diverse sector. Our research spanned aerospace, automotive, defence and construction, as well as 'traditional' manufacturing. Despite different production pressures, a number of common challenges specific to data emerged.

Ranking each organisation out of 10 for being data-driven, the industry average is 6.8. The automotive sector reported a high level of comfort using data to make decisions while other sectors considered themselves less advanced. As one interviewee remarked, they quite simply have too much information, but too little insight.

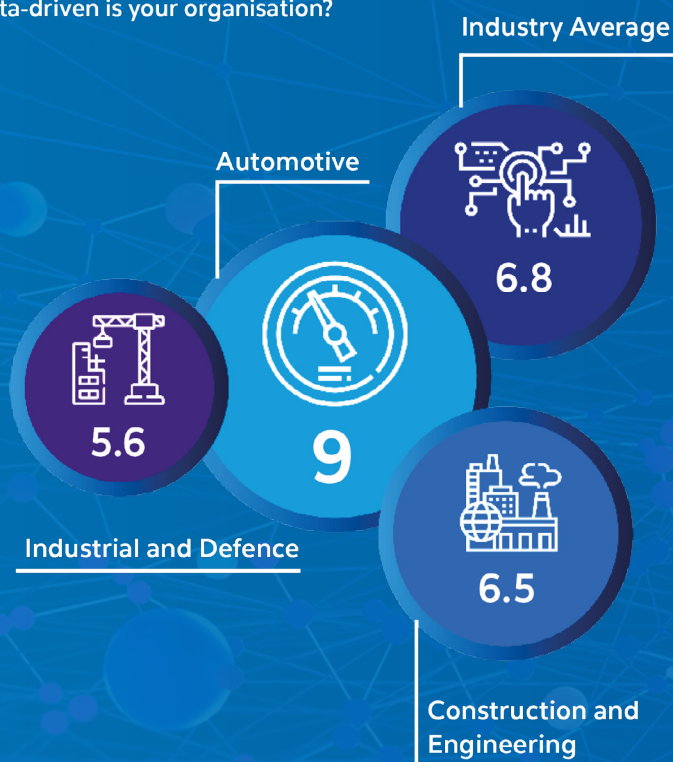
Finding commercial value

Many functions, particularly engineering, procurement and finance, use data in a sophisticated way, yet almost all respondents felt more commercial value could be unlocked if there was a consistent approach to data across the enterprise.

Data is highly valued, especially in terms of engineering decisions, safety environments and reporting for example. Monetising this value is extremely challenging.

Anonymous

Figure 1: On a scale of 1 (least) to 10 (most), how data-driven is your organisation?



Data is in plentiful supply but a key barrier to value is that data is highly siloed across business units and geographies. In construction, the bespoke nature of projects often means that historic project data isn't exploited. Aerospace and defence operate under strict regulatory and legal requirements that govern how data is shared and stored, which makes changing established data processes and reporting practices particularly challenging.

Ultimately, investment in data strategy doesn't easily translate into ROI, such as reducing quantities of materials or downtime. Data's primary role at an enterprise level is reporting. Yet there's often doubt over what is being measured and how data relates to KPIs – a problem that's increasing as data volumes grow.

We tend to use pockets of data, depending on where the fire is burning today, rather than that 'golden thread' to move forward continuously in line with the strategy.

Gareth Lewis, Founder, Project7 Consultancy

In our study, the automotive sector bucked the trend. A combination of lean production values, fierce competition and strong customer incentives mean that data is seen as an asset, although improving interoperability is critical to liberate further value and take advantage of new business models as the sector decarbonises.

Companies that adopt new technologies and help their staff innovate will be both closer to the end customer and more sustainable in the future.

Ruben Salazar Frutos,
*CENG Group Leader EU
Research, Honda EU*

Interoperability & data volumes

Fragmented data estates, compounded by complex supply chains and legacy machinery exacerbate interoperability, the second major challenge. In order to unlock value from data, organisations must understand what data exists across the enterprise and then figure out a way to monetise it.

We found five critical barriers that are holding organisations back:

- Data isn't joined up. Decentralised data strategies and legacy machinery mean data is held in disparate systems. Traditional methods of storing and calculating value from data will only hinder interoperability.
- Supply chains and customers use a web of different systems. For manufacturers, interoperability with suppliers and customers could unlock substantial competitive advantages when it comes to serving customers effectively and sharing data.
- Lengthy product life cycles contribute to an unwieldy mass of data that needs to be stored cost-effectively.
- Size and speed of data demands are placing new pressures on connectivity.
- Problems with the quality of data and lack of a consistent model across the organisation or supply chain means that too much time is spent mulching and preparing the data, in order to extract the value.

Standardisation

Much in manufacturing is standardised. Aerospace, automotive and defence are highly regulated and governed by established standards. Despite this, standardising data practices and structures across an enterprise, industry or supply chain is met with a number of challenges:

- Manufacturers need to overcome internal resistance to standardisation across units and geographies in order to achieve data standardisation.
- Standardisation has to happen across multiple organisations: supply chains and customers need to be working towards the same standard.
- The competitive nature of manufacturing hampers efforts for industry-wide collaboration on data.
- An increased demand for reporting is driving new imperatives for standardisation. Manufacturers must understand how they can organise data to improve reporting and meet new demands on environmental, social and corporate governance (ESG) metrics.

We're seeing a greater demand for ESG data, such as demographics, traceability and social reporting.

Nathan Horsman,
*Director Strategic
Development, Government
Solutions EMEA, KBR*

The Data-Centric Manufacturer

A new perspective on holistic operations

The data model

Expectations around data have fundamentally changed in the last few years. Data practices that were acceptable five years ago are now having to be radically rethought. In our study, most reported that data strategy was developed within each business unit. Whilst this makes sense, particularly for global manufacturers operating across different sectors and geographies, liberating value from data requires a degree of common standards and practices across the enterprise.

“ If someone had said to me 10 years ago, there will be value for manufacturers in putting your data in one environment and manipulating it as one set of data, I would have said that this was unlikely. Big data has rapidly evolved. ”

Jaye Tillson, *Head of Architecture, TT Electronics*

A unified data model that encompasses a common taxonomy and data glossary can help create value at scale, by enabling people to use and share data in a consistent way.

“ A consistent data model across the whole organisation is the key to unlocking value. Such a model enables you to map across and make the connections between different data from different places. ”

Mark Enzer, *CTO, Mott MacDonald*

A key barrier to value is a lack of visibility over how data flows across the business. An approach which gives a full enterprise view of data has a number of benefits, such as a deeper analysis of performance, the ability to exploit emerging technology and how data aligns with objectives.

“ A full enterprise view, that is, a bird's eye view of data, also enables you to improve and increase accessibility. ”

Pedro Rente Lourenco,
Head of Data Science, Laing O'Rourke

As data volumes grow, visualising the flow of data makes it more simple, and more relatable to KPIs.

Simon Foster, *Senior Manager, Toyota UK*

Data ownership & accessibility

Functional ownership is vital to building a data-centric organisation. As Graham Hopkins of Penleaf discussed with us, data has to be part of a functional model that relates to the process, tools and people; people with the appropriate capabilities using the right tools to execute the process. Then, he says, you evaluate what this model will look like in five years' time.

“ You can't separate data from that functional ownership. ”

Graham Hopkins, *Director, Penleaf*

For those building an enterprise-wide data model, one of the first and most challenging steps is defining key users and owners and building the master data team.

“ A key part of the journey to data maturity is to create good governance around data. And that starts with who owns it and who is accountable for it. In some cases that could be multiple people - it's not always clear cut. ”

Pedro Rente Lourenco, *Head of Data Science, Laing O'Rourke*



We're defining key users and owners for data in their respective areas. Then we have a roadmap for the next three years to evolve and mature not just data, but data structure, data administration and data quality.

Anonymous



And that data can't be seen as an asset that can be exhausted through use. The more data is used across a manufacturer the more value can be derived. By looking cross-functionally organisations can further de-silo data:



We're fostering a culture that delivers Information management (IM) use cases which are cross-functional. If we can deliver IM use cases which span the enterprise we're gaining even more value.



Sil Sehra, Head of IS, British Sugar

To unlock that value manufacturers should look to other data-driven organisations that have built data marketplaces. A data marketplace is a centralised platform to connect data consumers and data generators across the organisation. It has the benefit of allowing increased cross-usage of data whilst embedding data governance and data privacy into the way that data is used.

Data culture and leadership

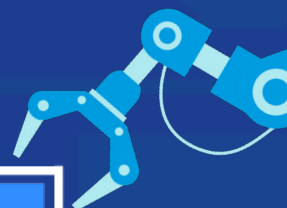
It's common to find a mix of data leadership between a Chief Data Officer (CDO), CFO, CIO and CTOs, with CDOs responsible for enterprise-wide governance and information strategy. A major conundrum is how to split responsibility for data strategy to ensure that data isn't viewed solely as an 'IT project.' Most respondents agreed that deploying technology was much more straightforward than changing behaviours and embedding a data culture within the business. In some cases, networks and communities exist specifically to get value out of data across business units and drive up standards in horizontal areas such as quality or product verification, which can be a useful way of de-siloing data practices.

Manufacturers are highly protective of IP, and initiatives to share data across supply chains and between competing organisations are limited. One respondent suggested anonymised and aggregated data from competing production lines could be analysed to benefit the industry as a whole, drive down costs and increase sustainability by sharing material and using less power.



There's a lot more raw data now due to an increase in the multiplicity of data sources. To get the value out of it, we need to now make sense of it and generate insights.

Anonymous



Driving superior customer experience and brand loyalty

Good data practice can drive a differentiating customer experience (and therefore brand loyalty), while also helping organisations create a culture of data-led decision making from the top.

Goods and services need to be complementary to the customer's needs, lifestyle and busy schedules. Manufacturers can use internal and market data as well as sources such as social media to understand trends and inform strategy. Senior leaders want data to be able to inform and guide forward-looking decisions, including: where capital should be invested to increase ROI; what product lines and services should receive more marketing investment compared to others; which geographies should be focused on. Current research impressions are that manufacturing organisations and their data functions are still grappling with reporting over historic data and not harnessing data to shape strategy and drive growth and investment which means there are big opportunities for manufacturers who manage to adopt a more forward-thinking approach.

Organisations need to also consider how they share information with their customers. Consumers and businesses alike continue to expect more data at their fingertips to be able to make comparative decisions regarding buying goods and services. Flexibility, choice and easy access to information that a manufacturer knows drives the selection of one product over another are key. Leveraging appropriate social media and industry forums via influencers to drive the desirability of brands and to gather data regarding competitor strategies is essential when it comes to engaging with the emerging generation of buyers.

Figure 2: Most to least data-driven teams in the manufacturing industry, according to our respondents



Five Steps to Data Maturity

Separating the value from the noise

Thinking about data as a journey towards maturity guides where to prioritise. Data maturity has five dimensions (Figure 3):

Figure 3: Five dimensions of data maturity



Quality

Recent research conducted by Cognizant with data and analytics leaders identified data quality as the biggest barrier to implementing an enterprise analytics platform.¹ Here, manufacturers are ahead of other industries. Commoditised products, rigorous regulatory and safety standards, and lean principles mean that data quality presents the lowest level of challenge. In general, inputs are good.

A data audit to confirm what data exists, where it resides and whether it is useful is the first step on the path to data maturity. This process can be hampered by inconsistent quality standards across the business, and supply chains or customers, and a lack of attention to metadata.



Availability

Making data available across systems is critical to making decisions faster and in real time. Extracting data from legacy machinery was highlighted as a particular challenge, although those businesses which had rationalised and linked ERP and PLM systems were reaping the benefits.

APIs can provide a standardised way to connect data and applications with reusable, composable APIs designed to perform a specific role — such as unlocking data, composing data into processes, or delivering an experience. This means an IT team can unlock a data set once and empower teams throughout the organisation to use that data in their own experiences.

“ It's a requirement that you need to be able to run APIs or get data in and out really quickly and that's the norm. If you look back at a 30 year old system it's not going to be able to do that and that's the biggest struggle. ”

Jaye Tillson, Head of Architecture, TT Electronics



Accessibility

Accessibility presents a medium level of challenge. Business users expect data to be available at speed, whilst joining up systems can require complex and

costly transformation. In general, business users can access what they need in order to execute daily processes, yet different or less common types of interrogation, such as comparing different data sources, often result in time-consuming searches and data-wrangling.

The pandemic has highlighted opportunities for better remote access and improved connectivity for data transfer:



We recently deployed SD Wan and remote solutions so that people can get at the data they need, which was essential as the pandemic hit.



Jaye Tillson, Head of Architecture, TT Electronics



Insight

The ability to derive insight from data across the business is a hallmark of data maturity. Separating the insight from the

noise is vital in this process, and the complexity of data at the point of consumption in manufacturing presents the highest level of challenge. The most advanced businesses are looking to exploit AI, IoT and 5G in order to lead the next generation of manufacturing: Manufacturing 4.0.

As volumes of data grow, reporting practices need to be reviewed and standardised. With many organisations not having clear, singular ownership of data, it is important to define what functional ownership means within the context of the organisation and to ensure that the right architecture is in place to allow collaboration.



Today's data challenge is like developing sonar systems in submarines, where you're looking for very small numbers of signals within lots of noise. The mass of data makes it critical to differentiate between the noise and signal, and that's the challenge many businesses face.



Paul Gosling, CTO, Thales UK



Literacy

Despite lots of tools, different factories or units often develop their own approaches to data and reporting, and data expertise

and behaviours are unevenly distributed. Driving democratisation of data skills and tools across the enterprise allows users to self-serve, but it is important that these behaviours are led centrally to ensure standardisation.



Ensuring that data literacy is part of the organisational culture ensures that people are incentivised to use data and know more about it in their sphere of influence. The hope is that they can then spread that enthusiasm across the organisation.

Anonymous



Opportunities for Growth

Creating data-powered factories of the future

Digital twins

In our study, experience in digital twins was high in construction, engineering and aerospace. Defined as, "...a virtual replica of a component, system or process, created by data to understand, predict and optimise performance in the real world. A digital twin can also use real-time data streamed from a product to describe its behavior or performance."² Respondents from automotive and commodity manufacturing were less advanced in their use of digital twins, although respondents in these sectors saw opportunities in remote management and maintenance of machinery. Digital twins are an essential component for verification in autonomous vehicle development, highlighting the potential for this technology to advance the automotive sector.

Digital twins provide "-as-a-service" opportunities as well as internal production efficiencies, whilst aspirations to create digital twins of entire factories and even the entire enterprise, show how digital twins are rising across the industry.

Scaling AI

Recent Cognizant research highlighted manufacturers as more likely than other industries to describe experiences of AI as 'beneficial only with considerable redesign/intervention'.³ In the same study, automotive organisations were most pessimistic about AI, with 75% agreeing that AI projects fail more than they succeed.⁴ These findings are surprising given that manufacturers report good quality data, and have some excellent use cases for AI. In our study, most defined their level of AI usage as 'beginner', although all had aspirations to increase AI use once key steps to data modernisation had been undertaken. For those at an intermediate or advanced level, AI was most likely used to offer advanced services to customers, rather than drive internal efficiencies.

Evolving platforms to data marketplaces

Organisations are under pressure to modernise data quickly and effectively to withstand volatility. A recent Cognizant survey of data leaders found that 83% are focused on modernising and organising data infrastructure.⁵ For many manufacturing companies, implementing a data platform provides a scalable environment that can interrogate growing amounts of data, in the most flexible and cost-effective way.

In the future, you'll see complete convergence, that is digital twins of entire businesses.

Anonymous

We use digital twins to operate condition-based maintenance. We'll take existing data, ingest it into our digital twin model to help clients change the way they operate their assets and to help optimise them.

Nathan Horsman, *Director of Strategic Development, Government Solutions EMEA, KBR*

The uncertainty brought about by COVID-19 means that predicting business outcomes using recent and historical data can be invaluable. Modern cloud platforms can help to reduce consumption across the applications estate, saving revenue by moving away from 'always on' virtual machines to PaaS models that give organisations the flexibility to support rapidly evolving priorities.

The resulting cleansed data estate is then available for consumption using the appropriate APIs, analytics and BI tools. This can be further enhanced by the use of API calls to other repositories or open data sources to drive innovation.

Sharing data & data marketplaces

A data marketplace option is the "exchange" model, which offers incentives to data providers to share their information. The incentive can be monetary or take the form of something like highly relevant, aggregated data as an enticement to share. The marketplace then aggregates and anonymises the data and offers it along with associated data-focused services to customers.

An example discussed in our research illustrates this well. Let us assume that an organisation with 50 production lines globally begins to collect performance data with a view to improve efficiency, reduce wastage and lower energy consumption. Comparing this data against an anonymised industry benchmark (based on c1000 production lines) would be much more insightful than trying to make sense of data from just the 50 production lines. The learnings out of the larger sample of data would be not exclusively available to a single organisation as a competitive

advantage, but it would greatly improve performance and sustainability for the market as a whole.

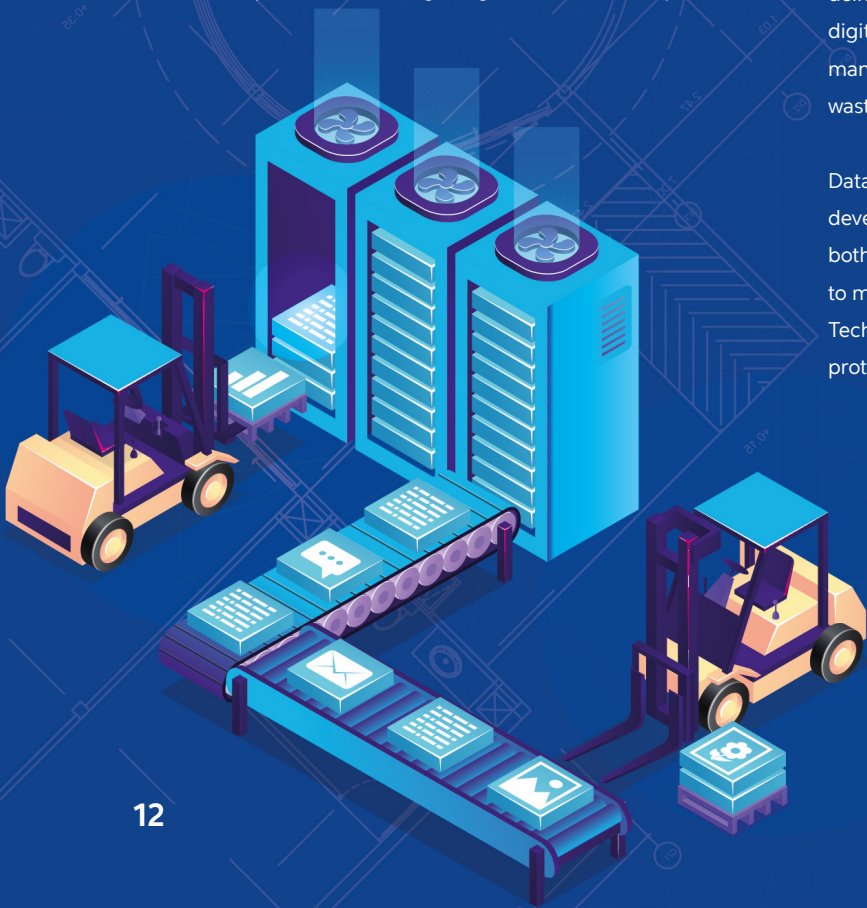
Our study revealed a significant reluctance to share data across organisations in the supply chain. Although this would benefit all participants with a greater pool of data, many manufacturers fear sharing too much data and losing IP to competitors. In addition to security concerns, many organisations also lack the IT environments to facilitate such sharing - particularly when the data in question is sensitive. When organisations are multinational or supply chains stretch across nations, sharing data across geographies becomes difficult.

However, the benefits of sharing data from a customer standpoint means serving customers more effectively and, crucially, feeding this data back into product design. With the manufacturing industry encompassing automotive, civil engineering, defence and industrial, the "customer" can refer to both private individuals and large-scale companies across the industry. B2C businesses in this sector appear to be the most sophisticated on the customer insights front. For B2B organisations there remain substantial amounts of data that are underexploited, and which could lead to greater competitive advantage if utilised as we see in the Retail and Airline sectors.

Additive manufacturing & 3D printing

Opportunities exist today to save large amounts on logistics, huge inventory costs and reduce time to supply clients by 3D printing in a decentralised manner closer to consumer locations. This could offer differentiation in quality and brand perception, and deliver bottom line benefits. However, the data integrity of the digital supply chain is critical for delivering success via additive manufacturing. This would have a direct impact on interoperability, wastage, costs and time to deliver.

Data solutions and supporting infrastructure should be robustly developed to share encrypted printing data to remote 3D printers both within and outside of the enterprise. This is important to maintain accountability and authenticity of the product. Technology solutions like 'blockchain' to prove the provenance, protect IP and detect fraud or industrial espionage are also crucial.





Next Steps

Towards the data-centric manufacturer

As in many sectors, the coronavirus pandemic has sharpened minds to new operational realities. Manufacturers must protect the on-site workforce, update safety protocols, and implement more remote monitoring. Economic uncertainty is driving a focus on costs and internal efficiencies, of which data is a key ally. In the midst of this, 'Lighthouse manufacturers' are demonstrating to the industry laggards how to adopt the technologies of the Fourth Industrial Revolution - namely AI and IoT - to create the most advanced, efficient and data-driven factories in the world.

Despite a wealth of quality data, manufacturers have a number of conundrums. Firstly, how can a balance be struck between ensuring IP is protected and reaping the benefits of sharing with suppliers and competitors to seek out new efficiencies? Secondly, how can data expertise be levelled up across the whole enterprise to enable new data-driven business models to emerge and inform strategy? Finally, what is the best model for data ownership, a critical stumbling block on the route to data maturity?

Our research suggests some key actions manufacturers can take to accelerate their journey to data maturity.

Start with a discrete business problem statement rather than a large data or analytics programme.

Small and early successes help organisations evidence value of data and initiate the culture changes required to be a data led organisation.

Undertake a data audit.

Find out what exists and where it resides. Challenge what data is kept and for what purpose. Map how data flows around the organisation today, and investigate how this may change in three to five years' time.

Level up data standards, governance and capability across the business.

Rising data volumes and changing regulatory requirements and demands require a modern and dynamic approach to data governance. To ensure data glossaries evolve, machine learning can support enterprise-wide data governance, to maintain data quality, standardise and make recommendations as more data is ingested.

Build a data culture.

A board-level champion and centralised teams can work alongside a community of data partners within different business units to enable data culture to radiate across the organisation. This is vital to embed the success of existing data initiatives but also to lay the groundwork to use data in new forward-looking ways in the future. Work with HR to align data strategy to incentives, performance and training. Without this, it is likely that skewed views of data ownership and accountability will be a major hurdle to data initiatives.

Adopt a layered approach to APIs. This unlocks and orchestrates data, and preps it for a given experience.

This means an IT team can unlock a data set once and empower teams throughout the organisation to use that data in their own experiences, resulting in 3x faster project delivery, on average, and a 63% reduction in maintenance costs.⁶

Re-evaluate data policies in line with a changing security landscape.

Whilst the pandemic has increased the scope and nature of security risks, much can be done to mitigate these by adopting more rigorous deletion policies and tightening employee processes such as offboarding. API-led data integration offers layered security, meaning there is security around the perimeter within which the API is deployed, within the API itself, and on the data at rest or in transit.

Prepare for future data demands and lay the foundations for automation.

A growth in IoT data will enable predictive asset management, for example, and behavioural analytics can fine tune safety and security practices. Remote monitoring, maintenance and training, especially post-COVID-19, will encompass data-rich technologies such as digital twins, VR and AR while increased demands for ESG reporting will drive different types of data capture and analysis to demonstrate traceability across supply chains. Organisations should also consider whether cross-industry data-sharing and collaboration could benefit the sector as whole.

Steps taken today will lay the foundations for the factories and production techniques of the future and enable the industry to better adapt to future disruptions. The future of manufacturing is in the data most organisations already have at their fingertips, they just need to work towards data maturity to unlock its potential.

About the Author



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Ronnie is leading Cognizant's long term digital growth strategy for the Manufacturing, Logistics and Transport sectors in the UK. With over two decades of delivering transformation programmes across a multitude of industry sectors such as Healthcare, Travel, Rail, Aviation, Construction and Manufacturing in a variety of technical and business facing roles; Ronnie is firmly of the opinion that People, Process, Technology and Culture need to be harmonised to drive digital transformation. In the context of data led initiatives, he believes a human centric approach, to understand the 'decision making' needs of the end user - i.e. what data is needed to help the individual make the best decision and how can it be delivered in a secure, visually appealing manner at the point of need - is a crucial aspect to address before scaling technology.

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Footnotes

1. The Road to Data Modernisation, Cognizant Forrester Whitepaper, September 2019
<https://www.cognizant.com/ai/gated-forrester-data-mod>
2. <https://www.cognizant.com/glossary/digital-twin>
3. Original Cognizant research conducted with over 200 IT and Business Decision Makers in 2020.
4. Original Cognizant research conducted with over 200 IT and Business Decision Makers in 2020.
5. Original Cognizant research conducted with over 200 IT and Business Decision Makers in 2020.
6. <https://www.mulesoft.com/lp/whitepaper/api/data-integration-business>



About Cognizant

Cognizant (Nasdaq-100: CTSI) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 185 on the Fortune 500 and is consistently listed among the most admired companies in the world.

Learn how Cognizant helps clients lead with digital at www.cognizant.com or follow us @Cognizant.

About MuleSoft, a Salesforce company

MuleSoft, the world's #1 integration and API platform, makes it easy to connect data from any system — no matter where it resides — to create connected experiences, faster. Thousands of organizations across industries rely on MuleSoft to realize speed, agility and innovation at scale. By integrating systems and unifying data with reusable APIs, businesses can easily compose connected experiences while maintaining security and control. Through API-led connectivity, customers unlock business capabilities to build application networks that deliver exponentially increasing value. MuleSoft is the only unified platform for enterprise iPaaS and full lifecycle API management, and can be deployed to any cloud or on-premises with a single runtime.

"MuleSoft allows us to rapidly unlock the data in our legacy platforms," said Chris Taylor, VP, Digital Accelerator, Airbus. "We can use the data to optimize our manufacturing and supply chain processes, and ultimately optimize our aircraft."

Learn more about data integration with MuleSoft: www.mulesoft.com/webinars/api/data-integration-tableau

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About Nimbus Ninety

Nimbus Ninety is a vibrant and diverse community of forward-thinking business and technology leaders. Since 2005, we've been connecting innovators, change-makers and disruptors from all sectors to enable them to share their experiences of disruption and move forward together.

Our community is made up of senior stakeholders from global blue-chip organisations, SMEs and the public sector, who are responsible for driving digital innovation across their businesses and industries. At the heart of what we do is a passion for driving value creation across the community. We foster engagement and collaboration between our members, our solution providers and our partners through our highly-engaging activities, in-depth research and thought-provoking content. For more information, visit www.nimbusninety.com or follow us @NimbusNinety.

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